

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-161-87

Relating to Exemptions Under Section 27156  
of the California Vehicle Code

Gale Banks Engineering  
Six-Gun Diesel Tuner, Part Number 68326

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39515 and Section 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the installation of the Six-Gun Diesel Tuner, manufactured and marketed by Gale Banks Engineering, 546 Duggan Avenue, Azusa, California 91702, has been found not to reduce the effectiveness of the applicable vehicle pollution control systems and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 2007 to 2009 model year Chrysler/Dodge Ram Trucks with a 6.7L diesel engine.

The Six-Gun Diesel Tuner is an add-on control module installed in series with the stock electronic control module. A six position rotary switch is installed near the driver to allow selection of performance options. Data files cannot be modified by the end user.

This Executive Order is valid provided that the installation instructions for the Six-Gun Diesel Tuner will not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the Six-Gun Diesel Tuner, as exempt by the Air Resources Board, which adversely affect the performance of the vehicle's pollution control system shall invalidate this Executive Order.

Marketing of the Six-Gun Diesel Tuner using any identification other than that shown in this Executive Order or marketing of the Six-Gun Diesel Tuner for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board.

This Executive Order does not constitute any opinion as to the effect the use of the Six-Gun Diesel Tuner may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on engineering evaluation and comparative Cold-Start Federal Test Procedure test, Supplemental Federal Test Procedure test and On-Board Diagnostic II (OBD II) system test conducted at an independent laboratory using a 2008 model year 6.7L Dodge Ram 2500 truck (test group 8CEXK06.7TXW).

Installation of the Six-Gun Diesel Tuner shall not block or prohibit the communication of all required emission related messages from the vehicle's OBD II system to a scan tool used for the Smog Check Inspection program in California.

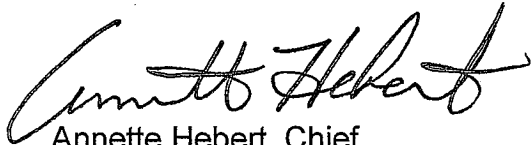
The Air Resources Board reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE SIX-GUN DIESEL TUNER.

No claim of any kind, such as "Approved by the Air Resources Board", may be made with respect to the action taken herein in any advertising or other oral or written communication.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after a 30-day written notice of intention to revoke the order, in which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within 30 days of receipt of the request and the order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 6 day of May 2011.

A handwritten signature in black ink, appearing to read "Annette Hebert", is written over a horizontal line.

Annette Hebert, Chief  
Mobile Source Operations Division

## EVALUATION SUMMARY

Manufacturer Name: Gale Banks Engineering

Name of Device: Six-Gun Diesel Tuner

Background:

Gale Banks Engineering of 546 Duggan Avenue, Azusa, California 91702, has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Six-Gun Diesel Tuner designed for 2007 to 2009 model year Chrysler/Dodge Ram Trucks with a 6.7L diesel engine.

Recommendation:

Grant exemption to Gale Banks Engineering as requested, and issue Executive Order D-161-87.

Device Description:

The Six-Gun Diesel Tuner is an add-on control module installed in series with the stock electronic control module. A six position rotary switch is installed near the driver to allow selection of performance options. Data files cannot be modified by the end user.

Discussion/Basis for the Recommendation:

Gale Banks' Six-Gun Diesel Tuner is specifically designed for installation on 2007-2009 Dodge Ram trucks with a 6.7L engine. These trucks are certified to the Ultra Low Emission Vehicle (ULEV) standards, and are subject to on-board diagnostic II (OBD II) requirements and Auxiliary Emission Control Device (AECD) durability evaluation. To ensure that the installation of the Six-Gun Diesel Tuner will not cause any adverse effect on emissions, durability (AECD strategy) or OBD II monitoring, Gale Banks submitted a detailed description of the Six-Gun Diesel Tuner's function and operation. This submission included the various engine parameters/sensors monitored and/or modified, the conditions under which the changes are made, the amount or percent of change for each engine parameter and the impacts of the modifications to engine operation, OBD II system monitoring and AECD strategies. To validate what was described, Gale Banks submitted data on the level of activity for its Six-Gun Diesel Tuner when operated using the chassis-based Federal Test Procedure (FTP) test cycle. The technical information and test data submitted indicate no adverse effect on OBD II operation and the stock vehicle's AECD strategy.

Furthermore, to demonstrate the emissions and OBD II impact of the Six-Gun Diesel Tuner, Gale Banks Engineering conducted comparable FTP and Supplemental FTP (SFTP US06/ SC03) emissions tests on a 2008 model year 6.7L Dodge Ram 2500 truck. The testing protocol was determined based on the device's operation, the test vehicle's new vehicle certification requirements and the test cycles that would likely cause extreme changes in the test vehicle's emissions. OBD II checks were also performed using the same vehicle. Results from emission testing conducted at Automotive Testing and Development Services, Inc. located in Ontario, California are shown below (in grams per mile).

	CVS-75 FTP			
	HC	CO	NOx	PM
Baseline 1	0.255	0.3	0.11	0.0040
Baseline 2	0.228	0.3	0.14	0.0040
Baseline Avg.	0.242	0.3	0.13	0.0040
Device Test	0.254	0.3	0.12	0.0046
Difference	0.012	0.0	-0.01	0.0006
% Difference	5.0	0.0	-7.7	15

	SFTP US06			SFTP SC03		
	NMHC+NOx	CO	PM	NMHC+NOx	CO	PM
Baseline	0.77	0.02	0.0283	0.32	0.86	0.017
Modified	0.85	0.01	0.0218	0.33	0.66	0.017
% Difference	10	-50	-23	3.1	-23	0.0

Test results showed that the difference between the modified and baseline emission levels for HC, CO and NOx, with the Six-Gun Diesel Tuner set at the highest horsepower gain setting, were within the 10 percent limit. The difference between the modified and baseline PM emission level is 15 percent, but the actual value is very low (.0006 g/mile) and is beyond the instrument's level of detection. Therefore, the PM increase is considered insignificant. Examination of the OBD II system showed the Six-Gun Diesel Tuner did not affect OBD II system operation. A similar effect on vehicle emissions and OBD II monitoring is expected with the installation of the Six-Gun Diesel Tuner on the other vehicles listed in this Executive Order.

In addition to the above mentioned testing and evaluation, staff also expressed concern that the Six-Gun Diesel Tuner may cause scan-tool compatibility issues during a Smog Check inspection. With the Six-Gun Diesel Tuner installed, the scan tool used by a Smog Check technician may not be able to access emission related messages from the vehicle's OBD II system. Since the OBD II system test portion of the diesel Smog Check Inspection program is currently under development, Gale Banks cannot run the checks at this time to ensure compatibility. However, Gale Banks is aware that installation of its Six-Gun Diesel Tuner must not block or prohibit the communication of all required emission related messages between the vehicle's OBD II system and the scan tool. This requirement is stated in its VC 27156 exemption Executive Order.

Gale Banks Engineering's Six-Gun Diesel Tuner meets the criteria for exempting general criteria parts for those vehicles listed in the Executive Order. This device is listed in ARB's Products in Progress (PIP) list, which is used by a Smog Check technician to pass a diesel vehicle with a modified part that has no Executive Order. Devices on the PIP list may be subject to recall. However, for Six-Gun Diesel Tuner, part number 68326, no recall plan is needed since no Six-Gun Diesel Tuner has been sold for 2007-2009 model year Chrysler/Dodge Ram trucks.

Vehicle test weight and horsepower target coefficients were, 8500 lbs. and 79.85, 1.2052, 0.03106 respectively. Horsepower gain measured at 96hp